

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-33 (withdrawn)

34. (previously amended) A method for detecting planarization of a top surface of a workpiece with features in an electrochemical mechanical deposition process that uses a solution containing a conductor therein and operates upon the top surface comprising the steps of:

depositing the conductor to fill the features within the top surface of the workpiece using electrochemical mechanical deposition employing a workpiece surface influencing device, an applied potential and the solution;

transmitting a beam of light onto the top surface of the workpiece to obtain a reflected beam of light, a characteristic of the reflected beam of light being altered by a top surface pattern that exists due to the features within the top surface of the workpiece; and

detecting a change in the characteristic of the reflected beam of light indicative of a degree of planarization to the top surface of the workpiece.

35. (previously amended) The method according to claim 34 further including the step of terminating the electrochemical mechanical deposition at a predetermined degree of planarization.

36. (previously amended) The method according to claim 35 further including a material removal step.

37. (previously amended) The method according to claim 36 wherein the material removal step performs chemical mechanical processing.

38. (previously amended) The method according to claim 36 wherein the material removal step performs electrochemical mechanical polishing and further comprises the steps:

transmitting another beam of light onto the top surface of the workpiece to obtain another reflected beam of light; and

detecting a change in a characteristic of the another reflected beam of light indicative of a another material on the top surface of the workpiece.

39. (previously amended) The method according to claim 38 wherein the beam of light and the another beam of light are from a same source.

40. (original) The method according to claim 34 wherein the characteristic is intensity of the reflected beam of light.

41. (original) The method according to claim 34 wherein the beam of light transmitted onto the top surface of the workpiece passes through the workpiece surface influencing device.

42. (original) The method according to claim 41 wherein the characteristic is intensity of the reflected beam of light.

43. (original) The method according to claim 34 wherein the beam of light transmitted onto the top surface of the workpiece is adjacent to the workpiece surface influencing device.

44. (original) The method according to claim 43 wherein the characteristic is intensity of the reflected beam of light.

45. (previously amended) A method for detecting planarization of a top surface of a workpiece in an electrochemical mechanical deposition process that uses a solution containing a conductor therein, the steps comprising:

electrochemically mechanically processing the top surface of the workpiece using a workpiece surface influencing device, an applied potential and the solution to deposit material onto the top surface;

transmitting a beam of light onto the top surface of the workpiece to obtain a reflected beam of light; and

detecting a change in a characteristic of the reflected beam of light indicative of a degree of planarization to the top surface of the workpiece.

46. (previously amended) The method according to claim 45 further including the step of terminating the electrochemical mechanical process at a predetermined degree of planarization of the top surface.

47. (previously amended) The method according to claim 46 further including the step of removing at least a portion of the material.

48. (previously amended) The method according to claim 47 wherein the step of removing performs chemical mechanical processing.

49. (previously amended) The method according to claim 47 wherein the step of removing performs electrochemical mechanical polishing and further comprises the steps:

transmitting another beam of light onto the top surface of the workpiece to obtain another reflected beam of light; and

detecting a change in a characteristic of the another reflected beam of light indicative of a another material on the top surface of the workpiece.

50. (previously amended) The method according to claim 47 wherein the step of removing performs electrochemical mechanical polishing.

51. (previously amended) The method according to claim 45 wherein portions of the top surface is conductive and the step of electrochemically mechanically processing deposits a conductor into features disposed in the top surface of the workpiece.

52. (previously amended) A method for detecting planarization of a top surface of a workpiece having a plurality of features comprising the steps of:

depositing the conductor to fill the features within the top surface of the workpiece; and

obtaining a signal indicative of a degree of planarity of the top surface.

53. (previously amended) The method according to claim 52 wherein the step of obtaining comprises:

transmitting a beam of light onto the top surface of the workpiece to reflect the beam of light; and

detecting the a characteristic of a reflected beam of light from the top surface; and

transforming the characteristic into a signal which corresponds to the degree of planarity of the top surface.

54. (previously amended) The method according to claim 53 further including the step of terminating the step of depositing when the planarity of the top surface reaches a predetermined degree.

55. (previously amended) The method according to claim 54 further including a material removal step.

56. (previously amended) The method according to claim 55 wherein the material removal step performs electrochemical mechanical processing.

57. (previously amended) The method according to claim 55 wherein the material removal step includes:

transmitting another beam of light onto the top surface of the workpiece to obtain another reflected beam of light; and

detecting a change in a characteristic of the another reflected beam of light indicative of another material on the top surface of the workpiece.

58. (original) The method according to claim 53 wherein the characteristic is intensity of the reflected beam of light.

59. (previously amended) The method according to claim 58 wherein the intensity increases as the surface of the workpiece becomes more planar.

60. (previously amended) The method according to claim 34 wherein the conductor is copper.

61. (previously added) The method according to claim 38 wherein the conductor is copper.

62. (previously added) The method according to claim 38 wherein the another material is a barrier material.

63. (previously added) The method according to claim 40 wherein the intensity increases as the degree of planarization increases.

64. (previously added) The method according to claim 42 wherein the intensity increases as the degree of planarization increases.

65. (previously added) The method according to claim 47 wherein the step of removing performs chemical mechanical polishing and further comprises the steps:

transmitting another beam of light onto the top surface of the workpiece to obtain another reflected beam of light; and

detecting a change in a characteristic of the another reflected beam of light indicative of another material on the top surface of the workpiece.